Patterns, regularities, and evolution of contemporary popular music

Abstract
Popular music is a key cultural expression that has captured listeners’ attention for ages. Many of the structural regularities underlying musical discourse are yet to be discovered and, accordingly, their historical evolution remain formally unknown. In this contribution we use tools and concepts from statistical physics and complex networks to study and quantify the evolution of western contemporary popular music. In it, we unveil a number of patterns and metrics characterizing the generic usage of primary musical facets such as pitch, timbre, and loudness. Moreover, we find many of these patterns and metrics to be consistently stable for a period of more than fifty years, thus pointing towards a great degree of conventionalism in this type of music. Nonetheless, we prove important changes or trends. These are related to the restriction of pitch transitions, the homogenization of the timbral palette, and the growing loudness levels. The obtained results suggest that our perception of new popular music would be largely rooted on these changing characteristics. Hence, an old tune could perfectly sound novel and fashionable, provided that it consisted of common harmonic progressions, changed the instrumentation, and increased the average loudness.